

## REMARKS

Applicant has amended various claims for readability and clarity. Applicant has added new claims 87-90. Claim 87 is a combination of claims 1, 2, 4 and 7. Claim 88 is a combination of claims 1, 2, 4, 5 and 7. Claim 89 is a combination of claims 1, 3, 6 and 7. Claim 90 is a combination of claims 48, 49 and 52. Because the new claims are derived from claims that have been previously presented, no new issue is believed to be raised by the addition of these claims.

Applicant has also amended claims 1 and 48 to remove the reference to “and/or” and to return the claims essentially to its original form. Applicant has made the amendment in a genuine attempt to address the Examiner’s concerns and to place the application in a better condition for allowance or for appeal. It is believed that these amendments do not raise new issues that would require a new search to be conducted. As such, Applicant respectfully requests that these amendments be entered.

In the Office Action, the Examiner rejected claims 1-47 under 35 U.S.C. Section 112, second paragraph, as being indefinite for using “and/or”. Applicant has deleted the phrase from claim 1.

More substantively, the Examiner rejected claims 1-3, 7, 10, 14, 20, 21, 24, 25, 26, 32, 42, 43, 45, 48, 52, 55, 62, 63, 66, 67, 68, 74, 83 and 84 under 35 U.S.C. Section 102(b) as being anticipated by Yang (US Patent No. 5,859,700). The Examiner also rejected various other claims under 35 U.S.C. Section 103 as being obvious over various combinations of references including Yang, Okubo, Lee, Hochman, Kash, Simon, Yagi and Tuuanen. Applicant respectfully traverses these rejections.

The Examiner relies primarily on the Yang reference to assert that it teaches determination of a “spectral centroid” as recited in claim 1 because determination of a central value or a peak in an absorption spectrum in Yang is considered to be the same as a centroid. Applicant respectfully disagrees.

A spectral centroid is a term of art to mean a spectral center of gravity or a spectral center of mass which is quite different from the center or the peak of the spectrum as taught by Yang. The spectral center of gravity is typically used for asymmetric spectrum as shown, for example,

in FIGS. 3a-3b of the present application. Moreover, in most cases, the peak or center is not the same as the center of mass of the spectrum. The present specification discloses at least one way of determining a spectral centroid. As shown in FIG. 7, the signal value of each detection channel of a fluorescence spectrum is multiplied by a corresponding weight value in a weight function (see top right graph of FIG.7) that weighs different portions of the spectrum differently. As shown, higher spectrum is weighted more highly. The weighted signals are summed and then divided by the sum of all signals in the detection channels. Mathematically, this cannot possibly be the step of determining a simple center or peak. Simply put, a spectral centroid is not equivalent to a center or peak value as taught by Yang. None of the references teach or suggest determining a spectral centroid as recited in claim 1 or claim 48.

Applicant submits that since all claims recite the step of determining a spectral centroid, all pending claims 1-90 should now be allowable over the cited references.

Based upon the above amendments and remarks, Applicant respectfully requests reconsideration of this application and its early allowance. Should the Examiner feel that a telephone conference with Applicant's attorney would expedite prosecution of this application, the Examiner is urged to contact him at the number indicated below.

Respectfully submitted,



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